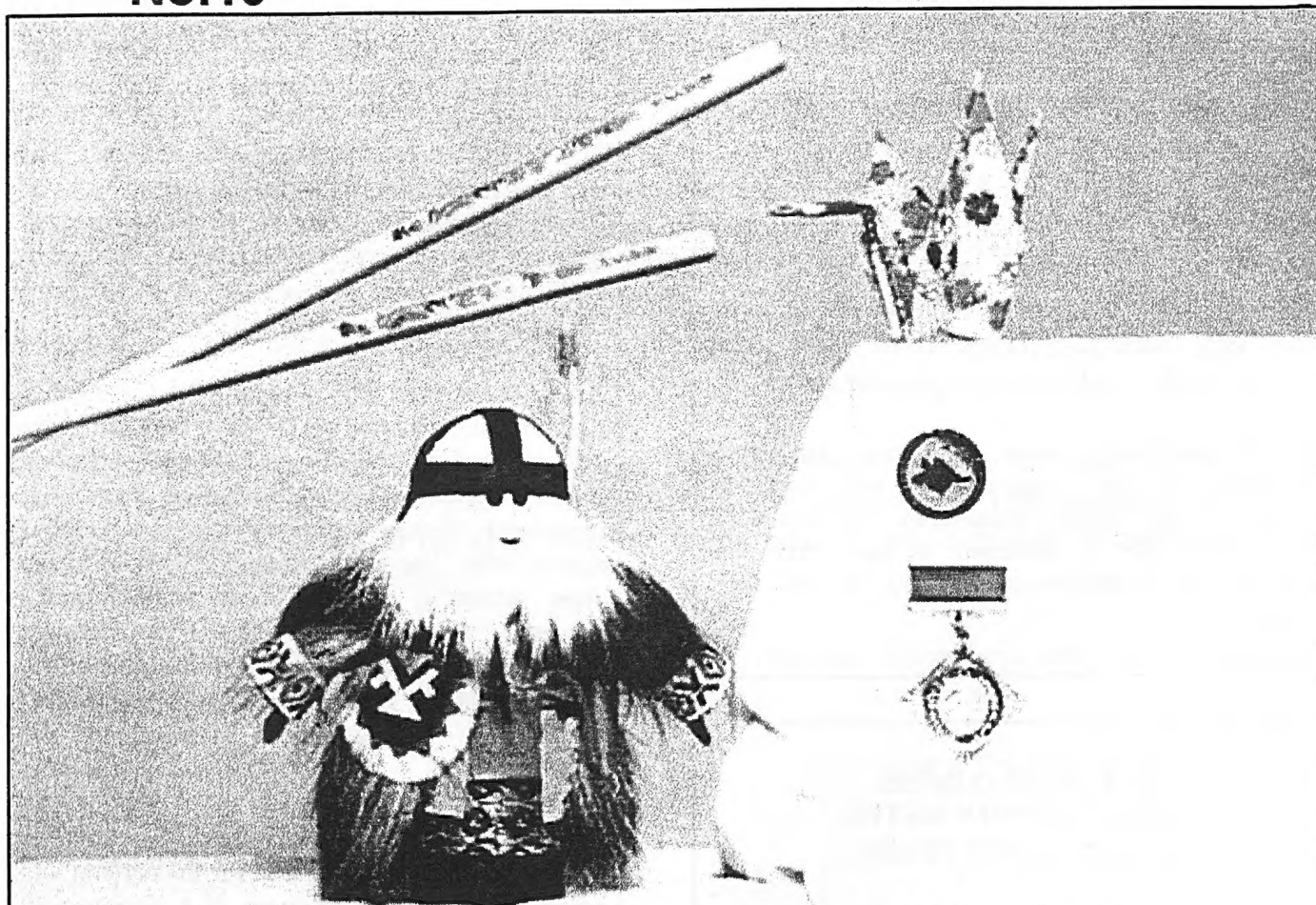


# ICE BREAKER

No.10

March 2000



**Air Links, Trade Links  
and  
Forum Working Parties**

## ICE BREAKER

ICE BREAKER is published independently by Malcolm Wallhead and Associates as a quarterly magazine covering Tasmanian Polar and Southern Ocean related topics.

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## EDITORIAL

Some recent events that have taken place in Tasmania are certainly perplexing for a State that is attempting to increase business activity and attract outside business income to its shores.

The first of these events involves Helicopter Resources and the fact that the emergency search and rescue helicopter contract has gone offshore. This despite the 15 years of loyal service by Helicopter Resources even to the point of their pilots receiving bravery awards on several occasions for actions beyond the call of duty. Surely it is a narrow view to consider saving a few dollars by using an offshore operator when ALL of that money then leaves Tasmania and Australia? In what way does that help Tasmania?

The second event also includes helicopters. It is the procrastination over the proposed use of World Heritage Areas for tourists/sportsmen who have not the time (or the good health) to walk into such areas in order to share the same pleasures that others are defending so fiercely.

It is accepted that in our democratic society it is right that all interested parties have their fair share of input, but all input should be founded on fact. Even emotive issues can be broken down into reasonable, factual components to be weighed against other, known parameters. World Heritage Area intrusions already occur without much apparent management. Now a stronger management strategy is needed to ensure that any development or existing activity in such areas causes nil or sustainable impact to the environment.

This problem has had to be addressed in Antarctica and was the reason for the coming into being of the Madrid Protocol. If a management strategy can be agreed to by many nations with conflicting interests then surely a single common speaking State can also arrive at a suitable management strategy for users of its wilderness areas? One hopes so for the sake of the Tasmanian tourism economy and for the sake of any proposed Antarctic Geological based tourism ventures which might require forays into wilderness areas, such as might arise from the Governor's Forum working parties. **MW**

Cover photo: Malcolm Wallhead. Some of the tokens of friendship exchanged at ISCORD 2000.

# A MESSAGE FOR ICE BREAKER READERS

Once again, Tasmania has witnessed an International Polar Flavour with the ISCORD 2000 Conference being held in Hobart recently.

It seemed to me that the conference was well organised by Tony Hughson and Cordula Ruckstuhl along with those others involved, and that they succeeded in making the delegates feel welcome in Hobart.

One should not underestimate the importance to Tasmania of hosting such international conferences in our State. Delegates return to their home countries not only with fond memories of our State but also with a much wider knowledge of our polar research, educational and production facilities and capabilities. This provides Tasmania with a broader contact base and a greater opportunity of seeing our cold climate related business exceed the \$100 million mark.

A lot is known and said about our successful Atlantic Salmon industry which is also worth about \$100 million to the economy. Antarctic Affairs and other cold climate related business achieves nearly the same result but has nowhere near the same community recognition. I believe that it is important that the Tasmanian polar community make known its activities, not only locally but to overseas contacts as well. To this end, I would like to suggest that we provide the revenue necessary to increase the circulation of the well produced ICE BREAKER magazine to a wider readership. This magazine is a credit to its producers and I believe it is important that more people get a chance to read it.

I would also recommend the enlargement of a TPN commercial display to feature in the Hobart CBD as I am sure that there would be strong community interest in it. I personally observed the amount of interest shown in the Igloo Satellite Cabin when it was displayed in the foyer of the Hotel Grand Chancellor recently.

The year 2000 should be designated as the year of Antarctic Awareness and I would certainly give my strong support in achieving that.

HON. PETER HODGMAN MHA

**ICE  
BREAKER** MAGAZINE



# TPN SUMMER RECEPTIONS

## POLAR STAR

In December last year, the US. Coastguard Icebreaker 'Polar Star' paid a four day visit to Hobart to collect supplies of Tasmanian wines and to take on board a team of graduates who had been flown in from the USA to join the ship here. The graduates were about to have their first Antarctic experience.

To welcome those on board the ship to Hobart, the Tasmanian Government and the Tasmanian Polar Network jointly hosted a cocktail party at Antarctic Adventure on the evening of Saturday the 11th December. Around 50 people attended the get-together and joined in lively discussions with each other on topics as varied as Tasmanian wildlife, Tasmanian wine, American television and of course, business.

During the evening most of the visitors took the opportunity to see the polar displays at Antarctic Adventure, several enjoyed a 'bobsled' ride and all were pleased to have been able to visit the special Mawson exhibition.

## THE LAWSONS

Eight days after the 'Polar Star' reception the TPN Chairman, Bill Lawson and his wife Lea hosted the TPN members and their partners to afternoon tea at their home in order for them to get to know each other better in a social setting. The Governor of Tasmania, Sir Guy Green, a firm supporter of Tasmania's polar affairs, was also present.

## L'ATALANTE

Shortly into the new millennium the French Oceanographic research vessel 'L'Atalante' docked at Princes Wharf in Hobart for a five day visit. The ship had just completed the first 25 day leg of a mapping survey of the ocean floor down

the eastern coast of Australia as part of the AUSTREA 1 project. AUSTREA 1 is intended to give a better understanding of the ocean's floor and thereby enable a more balanced management of Australia's South East Marine Zone. When the ship left Hobart for the second leg of the survey, it was intended to map as far south as Macquarie Island.



To welcome the scientists and crew of the L'Atalante to Hobart another reception was arranged at Antarctic Adventure. This was organised by the TPN and sponsored by Stephen Parodi of Beaufort Shipping and Antoine Guichard of Latitude Technologies.

Though at first there seemed to be some communication difficulties, at least three of the TPN members took the opportunity to practice their French, and after one or two drinks many of the French nationals discovered that they had a few words of English which improved with use during the evening. This enabled more discussions to take place so that by the end of the function the ship's complement departed Antarctic Adventure to return to 'L'Atalante' in good cheer and with a better knowledge of Hobart and the members of the Tasmanian Polar Network.

## TPN CHAIRMAN'S MESSAGE

"Since the last issue of ICE BREAKER magazine, many things have progressed which were referred to last time. Several Working Groups have been established by Invitation from Sir Guy Green following his hosting of the Forum last November. These Groups are all working on different aspects of Antarctic related opportunities for our State with a view to providing a series of Papers for consideration at another Forum in May this year. TPN Members are urged to make input to this work by either invitation or by request as they will greatly assist in setting the course for the future.

As Chairman of the TPN I am trying to ensure that the wider Tasmanian Community understands the opportunities ahead and that they are excited by the prospect of these opportunities. Positive excitement is a very motivating thing and we need all of this that we can get! I am briefing Tasmanian Chamber of Commerce and Industry, the Tasmanian Trades and Labour Council and the Hobart City Council in the next month and hope to get them all pulling together with us and the State Government.

The recent ISCORD conference in Hobart was in my view a credit to all those who won it for Hobart and made it happen. The more messages we get out regarding Hobart as a place where Cold Climate and Antarctic related things happen the better it is for our international prospects. We have also hosted visits from both USA and French Antarctic Expeditions and I am sure we are getting the message of welcome and our keenness to assist understood more widely.

The TPN home page has now been established by Antoine Guichard and it is a credit to both him and the TPN. I encourage all Members to visit it and look for ways to improve and enhance their own details with a view to enticing international interest in things here in Tasmania.

We are all now keenly awaiting the results of James Shevlin's investigations for Antarctic Airstrip sites as this is key to what happens next. I hope to arrange a Briefing from James at the next TPN Meeting scheduled for 3/3/2000.

The upcoming SCAR/COMNAP Conference in Tokyo in July is an important opportunity to showcase Tasmania and its services and products. The TPN will be represented there with a manned booth with the generous assistance (as ever!) of the State Government. I have said it before and will do so again; this is a time of opportunity for Tasmania in matters Antarctic.

The TPN has a pivotal role to play and I urge all members to make a strong commitment to their TPN membership this year in particular, despite the fact that we are all busy on many other things.

I find it very exciting!

*Bill Lawson.* Chairman, TPN.

# GOVERNOR'S FORUM

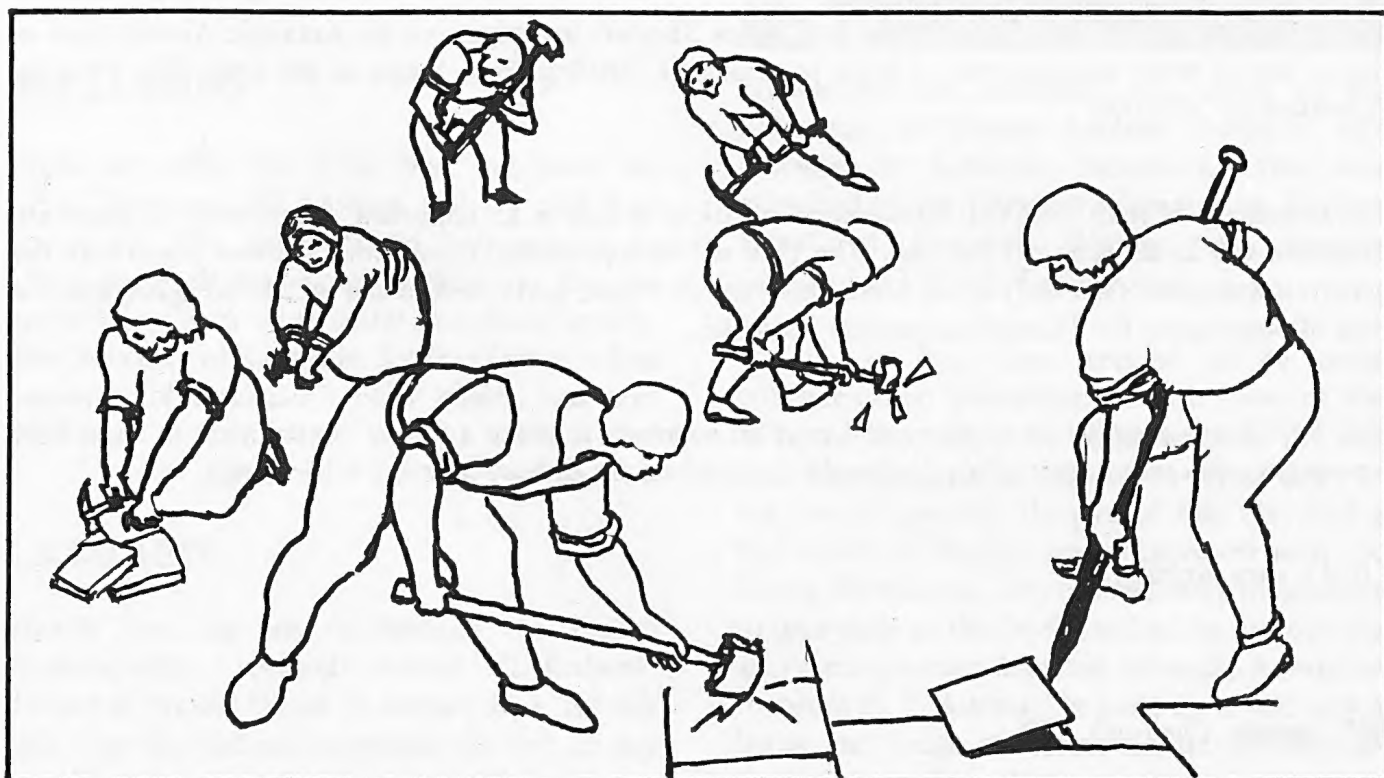
## DEVELOPMENTS

As a result of the Governor's Forum on the Antarctic, the sub-Antarctic and the Southern Ocean which was held on the 18th and 19th of November last year, eleven working parties have been set up to explore the means by which Tasmania can best benefit from its Polar assets.

The broad diversity of the four primary areas being researched necessitated the subdivision of most of the units into specialised segments. This will enable the head of each working party to concentrate on their own field of knowledge and therefore produce more detailed and accurate findings than a general overview would allow.

With the date now set for the follow-up forum at Government House, Thursday - Friday the 4th and 5th of May this year (invitations will be sent out in due course), the working parties are operating to a deadline. At the time of writing, one well informed source stated; "- my understanding is that they are working feverishly on their respective tasks at this moment." If this is correct, then the Tasmanian Polar community should be able to look forward to some thoroughly researched results upon which direct action can be taken in the near future.

The chart on the following page shows the four areas of interest, a breakdown of each group into the working parties titles and the Chairman in charge of each working party. Anyone who has a vested interest in any of the areas being covered, or feels that they have a contribution to make to any of the working parties, should contact the appropriate Chairman directly and as soon as possible.



**THE WORKING PARTIES GET CRACKING**



# THE GOVERNOR'S FORUM ON THE ANTARCTIC, THE SUB-ANTARCTIC AND THE SOUTHERN OCEAN WORKING PARTIES.

Area of Interest	Working Parties	Chairman
A. Tourism Opportunities	A.1. Market for and Developmental needs of Antarctic Tourism in Tasmania, Antarctica and the Sub-Antarctic	Mr Rob Giason Chief Executive Tourism Tasmania
B. Air Link Opportunities	B.1. Hobart Infrastructure  B.2. Meteorological  B.3. Promotion of National and International Air Links to Antarctica	Mr Bill Lawson Chairperson Tasmanian Polar Network  Dr Mike Pook Administrative Officer Antarctic CRC  Mr Rex Moncur Former Director Australian Antarctic Division
C. Education and Training Opportunities	C.1. Virtual Institute of Antarctic Studies  C.2. Antarctic Heritage Centre  C.3. Field/Survival Training Package  C.4. Public Education and Awareness	Dr Julia Green IASOS  Dr Pat Quilty School of Earth Sciences University of Tasmania  Mr Rod Ledingham Expeditions Training Officer Australian Antarctic Division  Alderman Pru Bonham Deputy Lord Mayor of Hobart
D. Environmental Protection Opportunities	D.1. Waste Disposal in Antarctica, the Sub-Antarctic and Tasmania  D.2. Provedoring and Compliance  D.3. Alternative Energy – Conservation, Generation and Storage	Dr Martin Riddle Program Leader Human Impacts Research Program Australian Antarctic Division  Professor Michael Stoddart ANARE Chief Scientist Australian Antarctic Division  Mr Andrew Livingston Hydro-Electric Commission

# 'ARCTIC SUNRISE' VISIT



In late September 1999 the 949 gross tonnage Greenpeace icebreaker 'Arctic Sunrise' arrived in Hobart to support the campaign against the Patagonian Toothfish pirate fishing. This visit was timed to coincide with the CCAMLR meetings that were held in Hobart between 25th October and 5th November, and gave Greenpeace an opportunity to air their views on this subject.

The Captain of 'Arctic Sunrise', Arne Sorensen is a veteran of polar and maritime campaigns for Greenpeace and has been master of their ships for many years. He explained that though he had visited Hobart several times in the past and had many friends here, on this visit there was little time for social activities. During their stay in Hobart the ship, which was built in 1975 and previously named 'Polarbjorn', was undergoing a major overhaul and certification inspection, meaning long working hours for those on board.

The Captain also explained some of the ship's campaign history which has included documenting emerging evidence of human induced climatic change in both Arctic and Antarctic regions; a protest against clear felling of the Great Bear Rain Forest in British Colombia; a 'No New Oil' campaign in the Bering Sea; and a tour of the Southern Ocean to try to stop illegal fishing.

When the 'Arctic Sunrise' left Hobart in November she headed to the Southern Ocean Whale Sanctuary to disrupt the illegal hunting of the minke whale. The Japanese whale industry intends to kill 440 minke whales this year despite world condemnation of their actions. Japan justifies its whaling activities claiming that it is crucial to research into the life cycles and populations of the whales.

The 'Arctic Sunrise' returned to Australia on the 25th January and berthed in Fremantle, W.A. having spent four weeks disrupting the whaling activities.



**Captain Arne Sorensen**

**Footnote:** Arne Sorensen was also Captain of the Greenpeace vessel M/V 'Gondwana' when she visited Hobart in December 1988 to collect an extended Igloo Satellite Cabin for their 'World Park Antarctica' campaign. The cabin was assembled on board the ship to instruct the crew in the method of assembly. Two weeks later the same cabin was punctured by a French bulldozer at Dumont d'Urville during an attempt to stop the construction of a rock fill airstrip. **MW.**



# ISCORD 2000

**THE INTERNATIONAL SYMPOSIUM ON COLD REGIONS DEVELOPMENT HELD IN HOBART FROM 31 JANUARY 2000 TO 4 FEBRUARY 2000 WAS A SIGNIFICANT SUCCESS.**

From Asko Saija the President of ISCORD

"Back home, I would express again my best thanks for interesting, convenient and well organised event. I wish all good for you and your staff for coming years and I hope to see you soon again.  
Best Regards"

From Harumi Sasaki, founder of ISCORD.

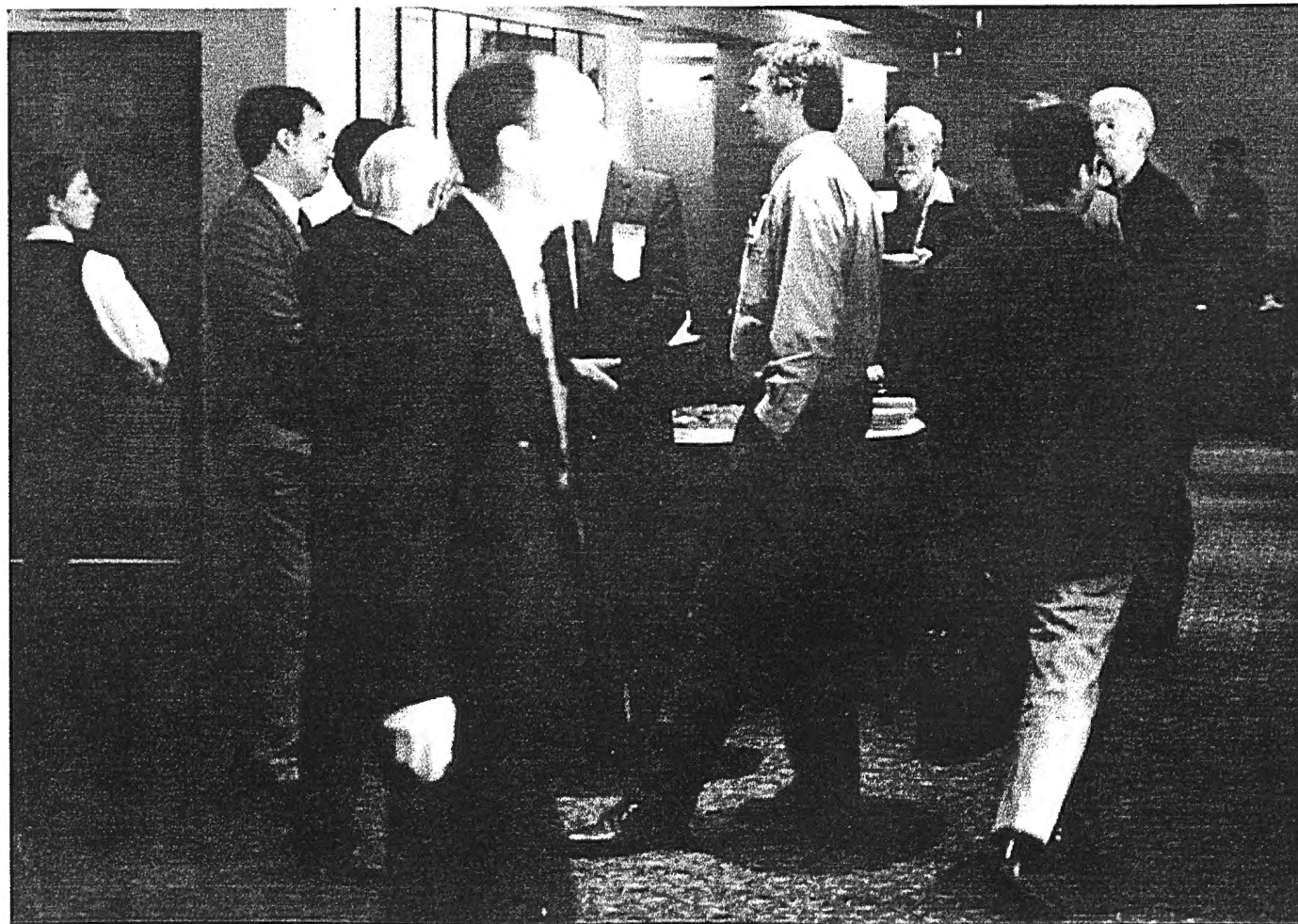
"Dear Friends:

Congratulation to the big success of ISCORD 2000, owing to your big contributions, which was the first ISCORD in the South Hemisphere. I was very glad to meet all of you then. We, Japanese delegates had a good experience and a kind hospitality through this Symposium. We are very much satisfied for attending this Symposium even though it was a long trip to Tasmania. Thank you for your friendship. I hope that we will meet again at Moscow in 2003.

Best wishes"

These were two of the congratulatory messages received by the organisers.

*Continued next page >*



**Visiting ISCORD delegates discovering more about Tasmania from the locals.**

International delegates to the symposium were fascinated with Tasmania. Common expressions were related to the beauty of the place, the clean air, the room to move, the warm people, the lack of policemen and the obvious freedoms we enjoy. I am sure 100 plus international cold regions scientists have gone home as ambassadors of this State. They have also returned to their homes with the knowledge that Tasmania is a major player in the Antarctic Sciences. Also that the quality of the work carried out in this State is at least equal to any others in the world. Out of the 115 papers presented at the conference 29 were based on work being conducted in Antarctica.

Conferences are a significant means of increasing the revenue generated in the State by Antarctic interests. Their significance is enhanced by the fact that all the money spent is spent in Tasmania. We call that good money - as against that money spent by organisations in the State that leaves the State. The not so good money.

In compiling the annual figures on Antarctic expenditure, David Lyons has always had to grapple with the "visitors to Tasmania" section because there are no figures available. As an exercise it was decided to keep accurate data on the cost of holding ISCORD to get some idea of the value of this type of conference. The numbers are interesting.

The cost of running ISCORD was \$116,300. This was made up of the following:

Conference Centre and Audio visual hire	\$15,500
Functions for Delegates	\$24,200
Printing	\$22,500
Administration and Secretarial Fees	\$17,500
Exhibition and Delegate Services	\$32,100
Publicity	\$ 1,500
Sundries	\$ 3,000.

On top of this each delegate spent additional money on accommodation, tours, meals and taxis. Some delegates flew to Port Davey for a few days R & R, others hired cars and went to Strahan and others still stayed on and toured the State. The spending on these items is conservatively estimated at an additional \$130,000, giving a benefit to the State approximating \$250,000.

Conferences are a way of increasing both Tasmania's revenue and our importance as an Antarctic centre, so remember to look to your memberships and associations in an effort to attract their next conference or meeting to the State.

**Tony Hughson - Convenor**

## **XII COMNAP/SCALOP TRADE EXHIBITION**

Twenty stands will be made available from 10th to 14th July 2000 for a Trade Exhibition to run concurrently with the XII COMNAP/ SCALOP meetings in Tokyo, Japan. The Tasmanian Polar Network have undertaken to occupy one of the stands to represent Tasmania's Polar interests. Both the Vice President and the Senior Vice President of the TPN have been nominated to act on behalf of the private sector, along with Tony Hughson of the Office of Antarctic Affairs and Peter Hodgman, MHA., as a representative of the State Parliament.

At the recent ISCORD 2000 Conference in Hobart, more than one third of the total TPN membership were involved in either sponsorship, organising or attending the Symposium. If similar enthusiasm is shown in the preparation of the TPN stand for the Tokyo Trade Exhibition then it should indeed be a successful undertaking.

**Editor.**

# ISCORD 2000

## AN AFTER THE EVENT APPRAISAL FROM A COMMERCIAL POINT OF VIEW



**The Aurora Designs booth was also shared by Blundstone Boots and Stormy Seas**

The International Symposium on Cold Region Development, ISCORD 2000, which was held at the Hotel Grand Chancellor between 31st January and 4th February this year provided an excellent opportunity for experts on cold climate technologies to get together and exchange ideas about both scientific and industrial products and services with delegates from thirteen countries.

Although small, the commercial exhibition on the mezzanine floor attracted a lot of interest from the delegates. Most of the visitors were not connected with polar research institutes and had no idea before coming to the Symposium of the important part that Tasmania plays in Antarctic affairs. They did not know of the Igloo Satellite Cabin and other polar field equipment made in Tasmania, or that Tasmania made cold climate clothing, and they had never heard of the Tasmanian Polar Network! All of this was able to be rectified before the end of the five day event.

Some of the delegates were keen to find out how Australia manages Antarctic pollution problems and were concerned about possible environmental damage by tourists visiting the continent. Information about the adherence to Madrid Protocol recommendations by both scientists and Antarctic tourism operators provided reassurance to those who enquired.

The mezzanine level was also the assembly area for delegates before each session as well as the location of the morning and afternoon teas for them. This gave the exhibitors an ideal opportunity to mingle with the delegates and get to know individual faces and names, and to learn the types of industries that they represented. By the time that the trade exhibition was dismantled on Friday afternoon, many trade contacts had been made and at least one joint venture proposed. In addition, the Russian, Chinese, Japanese, Swiss and other delegates had learned

*Continued next page >*



some of what Tasmania has to offer through translated brochures distributed at the exhibition.

In addition to the Symposium and commercial exhibition there were two other excellent opportunities for the overseas delegates and local groups to familiarise themselves with each other.

On the evening of the second day of ISCORD an 'icebreaker' reception was held at Antarctic Adventure in Salamanca Square, Hobart. The reception was arranged by the ISCORD 2000 organising committee and sponsored by Steve Darwen of Scantechics, the Australian agent for Hägglunds vehicles. The Convenor of the symposium, Tony Hughson, introduced the Opposition Spokesman on Antarctic Affairs, the Hon. Peter Hodgman, MHA to make the welcoming remarks, which he did with enthusiasm and good humour, and certainly in a manner intended to 'break the ice'.

The second opportunity was presented on the Thursday of the Symposium by the Governor of Tasmania, Sir Guy Green and his wife, when they invited all participants of ISCORD 2000 to an evening reception at Government House. Many of the delegates had that afternoon joined in tours of INCAT ship builders and an Australian style barbecue at Moorilla Estate winery, which put them in good spirits for the evening reception. At the end of this fourth day of the conference the assembly found that they were now at ease with each other, enabling the exchanging of small gifts with one-another and the individual inviting of some local businesses to visit the overseas delegates and their business premises in their home countries.

On the Friday, the final day of the Symposium, Judith Hennessy of Tasmanian Aurora Designs took advantage of the captive audience to launch her new Antarctic Collection of clothing. The Hon. Paula Wriedt MHA (Minister for Education) introduced the new range and completed the launching. Though Aurora Designs have been supplying the Australian Antarctic Division for about ten years, this new range of clothing is aimed at the Northern Hemisphere export market and the tourist market.

The ISCORD 2000 Symposium proved to be a very valuable means to display to this new segment of cold climate specialists not only Tasmania's goods and services but also its scientific knowledge and resources, as well as the warmth and the co-operative nature of the people.



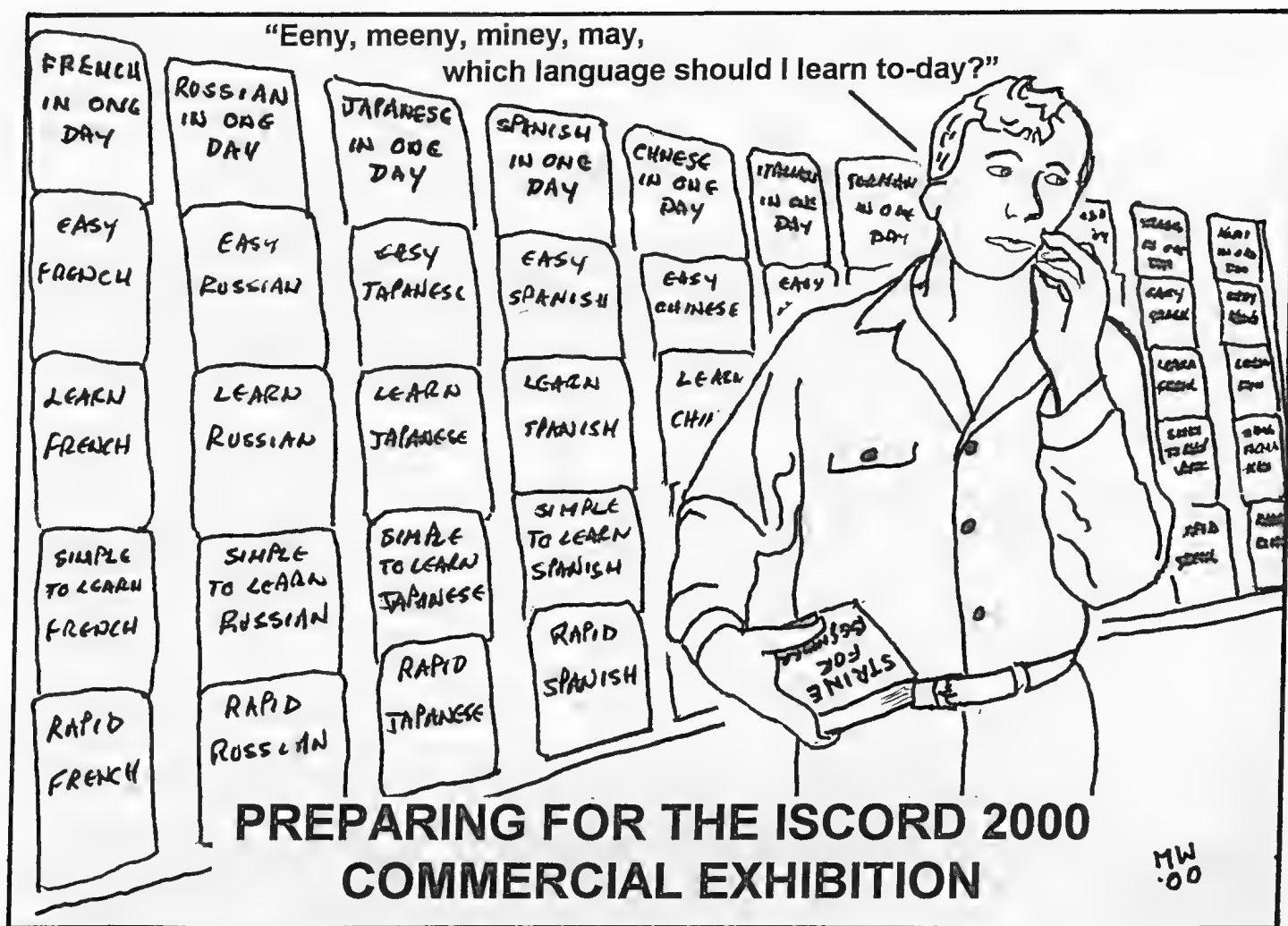
**The TPN display stand. Malcolm Wallhead and Associates also had a stand as well as an Igloo Satellite Cabin on display in the foyer of the hotel for the duration of ISCORD 2000.**

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**FOOTNOTE:** On the second day of the ISCORD 2000 Symposium the Kapt. Khlebnikov arrived in Hobart. The international passengers on board the ship had been booked into the Hotel Grand Chancellor for the following evening to guard against missing their flights home in the event that the ship arrived late. Many of these passengers later visited the ISCORD commercial exhibition booths on the mezzanine floor and marvelled to see photographs of scenes like they had just witnessed in Antarctica. There was even a photograph of one of the lecturers from the ship, Bob Headland of the Scott Polar Research Institute (SPRI).

Most of the passengers who visited the exhibition were leaving for their own countries on the Wednesday afternoon and several bemoaned the fact that their travel agents had not advised them to extend their stay in Hobart to enjoy the city, the people and the attractions that Tasmania has to offer. (An omission that will hopefully be rectified in the near future.)

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## POLAR PUBLICATIONS

### BOOKS:

'EXTREME SOUTH' by Ian Brown. Published by Australian Geographic Pty Ltd.

This book is an account of the trek undertaken by Ian, along with Peter Tresseder and Keith Williams, who hauled sledges from Berkener Island to the South Geographic Pole.

'SHACKLETON'S CAPTAIN: A BIOGRAPHY OF FRANK WORSLEY' by John Thomson. Published by Allen and Unwin. Price: \$29.95.

Describes Captain Worsley's role in Ernest Shackleton's 1914-1916 Antarctic voyages and reveals more of Shackleton's attitude towards his men and their rescuers.

'SCOTT'S LAST JOURNEY: THE RACE FOR THE POLE' edited by Peter King. Published by Duckworth. Price: \$55. This is a reprint of Scott's journals and Herbert Ponting's photographs.

'ANTARCTICA. A TRAVEL SURVIVAL KIT' by Geoff Rubin. Published by Lonely Planet.

The 2nd edition is due in September 2000 and is completely revised and updated.

# AN AUSTRALIAN VISIT TO McMURDO AND SCOTT BASES

or

## If your name doesn't start with 'P' don't apply!

At least that was the impression of the NZ and US programs when they hosted Kim Pitt, Chris Paterson and Sandra Potter (the three 'P's) from the Australian Antarctic Division (AAD), to a brief visit to McMurdo and Scott Bases earlier this year. The three 'P's form part of the Operations and Logistics organisation of the AAD and in January they went on a fact finding tour of their sister facilities with the intent of identifying what modern management theorists refer to as 'Best Practice', in the conduct of Antarctic Operations & Logistics support!

The informed reader will have noted that there is a lot happening within the support branches of the AAD and that the demand for a sharpened focus on how to do things better for ANARE is not being taken lightly. In the Op's area alone the new shipping charters signed in February with P&O Polar and Polar Shipping A/S for the hire of Aurora Australis and Polar Bird bring a different dimension to the shipping equation; the introduction of advanced Base Management & Control Systems at the three continental stations over the past two seasons brings real potential for improved energy usage; the maturing of the engineering section's R&D work on alternative energy systems shows some wonderful opportunities for improvements in operating costs/efficiency; the survey work in support of James Shevlin's Air Transport Study this season and the potential that this brings is very topical; the high quality output from the AAD's human impact group on remediation of waste sites suggests a need to broaden the Op's mind set regarding this issue; new and evolving internal environmental and financial processes alone cry out for some adjustment of past practice; and there are many others. In fact, the recent development that has most grabbed the attention of the Op's team has been the publishing of the new ANARE Science Strategic Plan, the customers' wish list!

No wonder the three 'P's didn't find it hard to muster up the courage to cross the Tasman and go looking for new ideas ... and also a bit of encouragement and confirmation regarding the very effective way that their Branch operates in support of contemporary Antarctic operations (unashamedly self-serving plug!).

They undertook a quick flight to Christchurch on 18<sup>th</sup> January and on arrival reported that it immediately was obvious to them that this was New Zealand's gateway to Antarctica. The evidence was everywhere, advertisements, local Government sponsored billboards, Antarctic related products on sale in the airport shops. One step outside the terminal and there were the paving markers showing the way to the commercially operated equivalent of our own Antarctic Adventure and, in the same precinct, the NZ head offices for three national programs. The three 'P's felt right at home.

The visits were well planned, co-ordinated and led by Mr. Julian Tangaere of Antarctica New Zealand and Mr. Harry Maher of the US National Science Foundation. The three 'P's spent Wednesday and Thursday the 19<sup>th</sup> & 20<sup>th</sup> of January in the offices of Antarctica NZ and of the United States Antarctic Program (USAP) discussing Op's matters of mutual benefit and significance; the focus of these discussions started out to be on what the three programs did differently – transportation of people and cargo; as well as their experiences in the use of contracted support services in Antarctica. However, the points covered were wide ranging and diverse, far too many and detailed to mention here but by way of example included how to ensure food stuff unable to be delivered to Antarctica (because of delayed flights) could be returned to the providore without cost penalty, through to the training of personnel on arrival in Antarctica, the management and support of major field programs at remote sites, and classes for people undertaking study at the bases.



On the day before the planned date of departure, the three 'P's were kitted out by the NZ clothing store and given a pre-departure briefing by the Antarctica NZ operations manager. Although tempted to go for a ride with the general public in the Hagglands that was part of the commercial attraction next door (and which included tours of the offices of the National programs) and looked like a lot of fun, the team retained their sense of purpose and toured the Antarctic elements of the airport facilities and infrastructure instead. These very frank and detailed discussions with the USAP were excellent and at the end of the day the three 'P's welcomed the chance to cool their notebooks down. For those who haven't visited the Antarctic center in Christchurch, the geographical blending and blurring of the boundaries between the public attraction, the three official national offices and those of their military/commercial contractors can be interesting; the three 'P's noted that it did not seem to cause any disruption or difficulty for any of the participants, in fact the reverse was the case.



Then on Friday 21<sup>st</sup> January after customs and check-in at the USAP terminal, a safety video and a warm hour of waiting in the Christchurch summer while wearing six layers of clothing (a USAP requirement for all personnel who fly with them) and carrying ECW (extreme cold weather) kit, the trek south began. However, after only an 8-hour flight in a ski-equipped US Air National Guard LC.130, and despite knowing how short a time it took, the three 'P's were surprised to find themselves delivered to the delights of McMurdo Sound in the Ross Dependency. Thus started four hectic days of discussion, visits and inspections of the facilities at McMurdo and Scott bases.

They were hosted and accommodated by the NZ program and report that it was a delight to be able to enjoy the friendship and hospitality of Ron Rogers and his team at Scott Base. This season has been an interesting time for the Scott Base personnel – a representative from SERCo New Zealand is on site making ready for potential transfer of Base Op's activities from Government to commercial management. The Board of Antarctica NZ also were at the Base re-acquainting themselves with the operation and are to decide on whether to proceed with this 'outsourcing' possibility, sometime in the near future.

*Continued next page >*

The three 'P's watched and absorbed as much as possible in regard to this, without intruding of course (in fact, several times their tact and diplomacy was mentioned to be marginally better than that of the average Australian cricket supporter – this was taken as a compliment) and as might be understood, the corporate and commercial sensitivities of the whole process do not permit general discussion of the topic in this article. What was obvious and can be said, is that the proximate, regular and dependable (within the limitations of weather & technical factors) availability of air transport shaped the whole process of organising and operating the Base, in fact the whole program. The increased speed of deployment of personnel; the greater flexibility in timing of visits; and the expansion of scientific capabilities as a result was obvious – the need to manage this sensibly was pointed out, as was the potential for it to be abused (how unusual thought the three 'P's). But the message was clear – no one at Scott could imagine working without air transport support.

Of course, the modest little station around the corner from Scott Base, McMurdo, was not to be outdone! They did their level best to show as much of their organisational process, facilities and infrastructure to the three 'P's as was possible. Support sheds with row upon row of portable generators, dozens of skidoos, tens and tens of heating units etc.; very large and well operated field equipment and food supply infrastructure; air traffic control & meteorological services; field training organisation; base chapel and chaplains; shuttle bus service; laboratory and science support organisation; coffee shop; communications infrastructure; construction and maintenance programs; jetty and stevedoring; runway maintenance, operations support and terminal operations; cargo and people handling systems etc., etc., etc., and all delivered by contractors. The size, complexity and sophistication of the US support operations caused the Australian eyes to light up and for a very brief moment, wish lists grew to fantasy proportions. The access to and flow of information facilitated by the National Science Foundation's Dwight Fisher and Dave Bresnahan was inspirational – freely given in a truly generous manner. The notebooks again ran hot and the three 'P's came close to overload.

The request for this article came about because of a particular interest in matters relating to Air Transport; so it may be interesting to note some of the anecdotal statements that were picked up from different quarters in the two Bases:

- "Our measure of success is simple; what you want, where you want it, when you want it. In practical terms this means we note the total number of movements of passengers & cargo, and the record of 'days late'."
- "The person at the end of the chain (field camp furthest from the terminal) decides not only what is needed, but also what should be sent; and it is only the delivery details that are determined here."
- "There can only be one authority for handling materials and loading the aircraft."
- "33% of passengers and 50% of cargoes are directly science related the remainder are for the support groups."
- "On flights in and out we average 6 changes per person. i.e.. to flight bookings, hotel reservations etc."
- "About 70% of flights carry hazardous cargo."
- "Air transport is certainly a flexible tool, but it only works if it is managed in a very structured way. The need for early detailed planning is paramount, yet paradoxically the temptation is to fall into a habit of sloppy planning."
- "The toughest customers to support are the heavy wheeled aircraft (ski-equipped have many more landing choices)."
- "Watch out for local weather variability. It is essential to have at least an observer at each site."

There were many opportunities to examine the pluses and minuses of how air transport impacted on the work of both nations in Antarctica. It will not be surprising to hear that, based on observations of the McMurdo and Scott operations, the three 'P's came away convinced that the positives far outweighed the negatives. As with the discussions in Christchurch, it would take pages to report the detail of these visits, but it can be said that there are many opportunities for the AAD that will open up if/when air transport is eventually introduced, that there are significant issues to be resolved for it to work at peak efficiency in support of Australia's program, and that the goodwill and spirit of co-operation that was demonstrated by the USAP and Antarctica NZ on the occasion of this visit means that there is no need to reinvent the wheel that, as was expected, there is a great deal of experience among national programs and contractors already.

Then just as the visitors started to comprehend the full dimension of what was being presented to them, it was time to leave. Well, not exactly. Poor visibility on the runway (everywhere else in McMurdo Sound was clear) meant that the inbound aircraft from NZ had to turn back to Christchurch in mid-flight. The three 'P's could not depart as scheduled and experienced firsthand the processes for finding them accommodation on base, cancelling motel bookings in Christchurch, for adjusting briefing programs, changing follow-on travel arrangements etc. These were made with consummate ease, because of the tried and proven processes in place, and yet another facet of NZ/US Op's support was demonstrated and experienced. The next day, 26 January, 38 of the 80 passengers awaiting return to NZ were able to board the RNZAF wheeled C.130 that took off from Pegasus Field; there were some additional delays due to cold-induced defects to the aircraft, but these were managed efficiently using the support facilities available on the ice-runway and the aircraft took off and delivered its passengers to the Christchurch terminal by 6 p.m. that evening. The three 'P's were among them.

On the 27th the team returned to Australia, only 9 days after they had started. In that period they had flown to NZ, enjoyed two fruitful days in Christchurch meeting with their counterparts from Antarctica NZ and the USAP, flown to Antarctica in a US Air National Guard ski-equipped LC.130, ravenously absorbed all that they could in three scheduled days at Scott & McMurdo Bases, took full advantage of an extra day on the ice because of weather delays, returned to NZ in a RNZAF wheeled C.130 and of course returned to Australia. By way of comparison, it may be of interest to note that after a similar period (9 days) on the ship, scientists travelling to Mawson on the 6th voyage of the season were facing the fourth gale of the trip and still had three days to go at sea before completion of the first leg of their voyage.

The very genuine and generous support of the New Zealand and United States national programs provided one of the best opportunities yet for the AAD Op's team to develop their ideas on improving the support they provide to ANARE. Other initiatives that will add to the sum of knowledge gained, and may be of interest also took place this season. Mr. Geoff Dannock and Mr. Guy Ratcliffe travelled to Punt Arenas and participated in a C.130 flight to Antarctica with a commercial operator using a quite different, almost minimalist approach to air operations in Antarctica; and Mr. Peter Magill spent several weeks as part of Mr. James Shevlin's survey team examining potential runway sites in the Australian Antarctic Territory (this group covered thousands of miles in a Twin Otter and eventually returned to Australia via the South Pole and the Peninsula to South America).

The combined experiences and lessons learned this season by the three 'P's and their fellow Op's Branch friends will be used to enhance the quality of the work being done to improve the overall processes of the AAD's operations and logistics support to ANARE.

**Kim F. Pitt**  
**26 Feb '00**



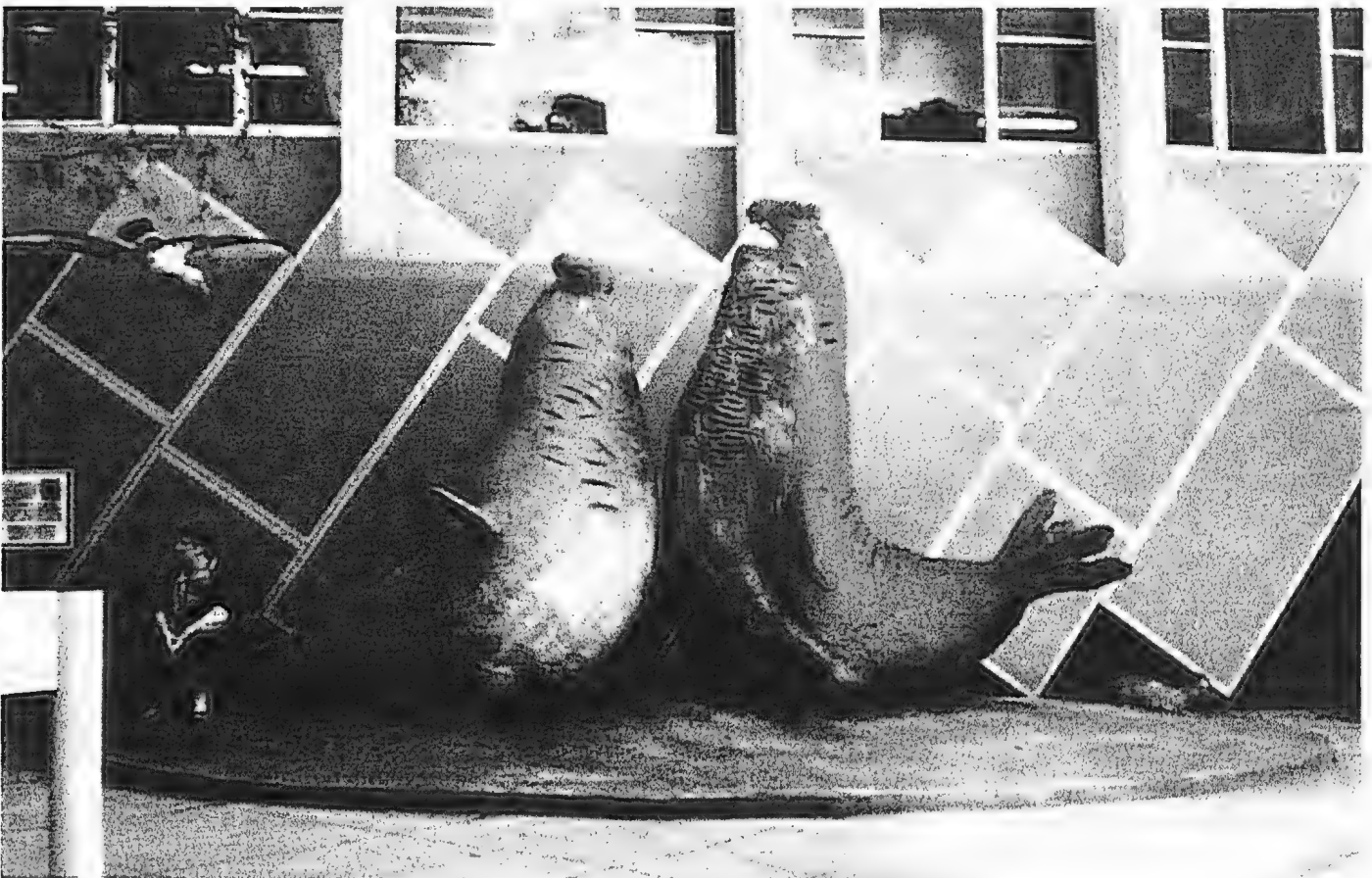
# NEW MEMORANDUM OF UNDERSTANDING

In September last year, the Australian Antarctic Division and the University of Tasmania signed a Memorandum of Understanding (MoU) to cover future research developments in fields of Antarctic science not already included in the Antarctic Co-operative Research Centre (CRC). Signed by Chief ANARE scientist Dr. Michael Stoddart and Vice-Chancellor Professor Don McNicol, the MoU means that Division staff will be able to participate in teaching and research activities at the University, and the University staff will participate in the Division's intellectual activities.

Jointly funded scholarships for graduate students will also be established in fields requiring innovation and creativity, and whilst other selected universities will be invited to sign MoUs with the Antarctic Division in the future, the University of Tasmania's status as Australia's leading Antarctic and sub-Antarctic research and knowledge centre has already been further enhanced.

An example of one of the University's departments which has strong links with Antarctic research is the School of Zoology, part of the Faculty of Science and Engineering. The School celebrated its 90th Anniversary by having an Open Day on October 31 last year and displays of Antarctic and Southern Ocean ecology were among those open to the public.

*Continued next page >*



**The large sculpture of Elephant Seals outside the School of Zoology.**

One of the courses available is a four year Bachelor of Science with Honours course in Marine, Freshwater and Antarctic Biology. This is unique in Australia and links the study of Aquatic Botany and Zoology with Chemistry, Microbiology and Biochemistry. Students undertaking this course have the opportunity to make direct contact with scientists and administrators from Federal and State Government departments as well as from fishing and aquaculture industries. These reference centres include: -

1. The CSIRO Division of Marine Research (Hobart)
2. The Australian Antarctic Division (Kingston)
3. The International Secretariat for the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) (Hobart)
4. The Inland Fisheries Commission (Hobart)
5. The Australian Maritime College (Launceston)
6. The National Key Centre for Aquaculture (Launceston campus of the University)
7. The University of Tasmania's Hobart campus:
  - Institute for Antarctic and Southern Ocean Studies (IASOS)
  - Co-operative Research Centre for the Antarctic and Southern Ocean Environment
  - The Tasmanian Aquaculture and Fisheries Institute (also at Launceston campus).

Job opportunities for graduates of this course range from basic marine biological research; managerial positions in fish farming industries; scientific administration of aquatic resources, and research into aspects of Antarctic ecosystems. With these facilities available, Hobart has become the national centre for marine research and half of the zoology researchers in Antarctica are from the University of Tasmania. **AW**

## **POLAR WORDS**

<b>ABLATION</b>	- The loss of snow or ice by melting or evaporation.
<b>CALVE</b>	- The breaking off of an iceberg from a glacier or ice shelf.
<b>KATABATIC</b>	- Gravity-driven wind caused by colder, heavier air rushing down from the polar plateau. Katabatic winds should not be taken lightly. At Commonwealth Bay (Mawson's Hut) katabatic winds have been recorded at speeds in excess of 300 km/h!
<b>MORAINE</b>	- Rock debris moved and deposited by a glacier.
<b>NUNATAK</b>	- A mountain or large piece of rock sticking up through an ice sheet.
<b>SASTRUGI</b>	- Furrows or irregularities formed on a snow surface by the wind.
<b>SNOW BRIDGE</b>	- The crust-like lid that often covers a crevasse; formed when windblown snow builds up on the leeward wall of the crevasse.
<b>WHITEOUT</b>	- A condition in which overcast sky descends to the horizon, causing a blurring between the ground and the sky and eliminating all points of perspective.

# **POLAR NEWS**

## **LARGEST DRILLING SHIP IN HOBART**

The Ocean Drilling Program's ship, the JOIDES RESOLUTION, will be arriving in Hobart this month. The ship will have spent the previous 2 months drilling in Prydz Bay, Antarctica, and will spend approximately 5 days in Hobart before departing for another 2 months in the Southern Ocean, drilling on the Tasman Rise south of Macquarie Island.

While in port the ship's crew will change over and the 30 scientists on board will also be replaced. The arrival of the ship in Tasmania is very exciting for the Australian scientific community, as both the arriving and departing scientific programs were instigated by Australians and will have Australians sailing as the Chief Scientists.

The JOIDES RESOLUTION is a unique drillship, sponsored by the Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES) for scientific exploration of the ocean floor. It is a floating research laboratory and for the next 2 years will be drilling and completing experiments in the Australian region. The drilling will address: climate change, East Asian monsoons, the ice ages and sea level change, the deep biosphere, ocean chemistry, volcanic and earthquake activity, and mineralisation from hot fluids.

These issues can be best understood with samples from deep sea drilling. Geologists, geophysicists, geochemists, paleontologists and engineers from Australia and other participating countries will be on board the ship.

The Ocean Drilling Program costs \$90 million per year, over half funded by the USA. Australia's membership of \$1.5 million is contributed by 14 Australian universities, CSIRO, the Australian Geological Survey Organisation, and the Federal Government through the Australian Research Council.

(from e-mail received by OAA)

## **ALBATROSS PROTECTION INCREASED**

Environment Minister Robert Hill has announced the Australia will head the development of an international agreement to save the endangered albatross, whose existence continues to be under threat from long-line fishing in the Southern Ocean. The Convention on the Conservation of Migratory Species of Wild Animals asked Australia to lead all countries with albatross species within their jurisdictions, and develop a strategy to reduce these seabird deaths.

## **SOLAR POWERED SCHOLAR**

Premier Jim Bacon has awarded a \$20,000 scholarship to Heath Lang, A Western Australian engineering graduate, to research how existing solar power technology can be made more efficient in areas of frequent cloud cover. Mr Lang will move to Tasmania to work at IASOS, and intends to establish test sites in Tasmania and Antarctica.

## **CLIMATE HISTORY**

Part of a Federal Government Grant for the Australian Biological Resources Study will be received by University of Tasmania scientists to research 90 million years of climate history. The team will receive \$55,000 to study DNA data from casuarinas, a plant dating back to Gondwanic times when the Australian continent was still attached to Antarctica.

## **TASMANIAN OCEANS DIRECTOR**

The first Director of Australia's National Oceans Office will be Alex Schaap, former Director of Marine Resources in the Department of Primary Industries, Water and Environment. The Office will be situated in central Hobart and will assist with future management of Australia's oceans.

## **FRENCH SERVICE**

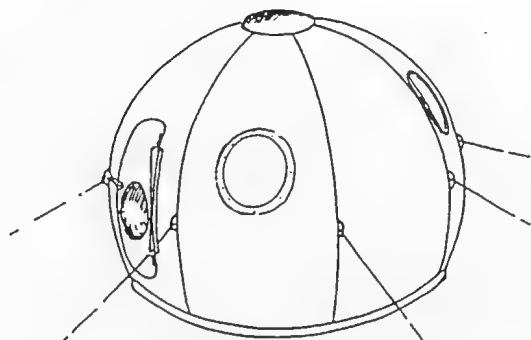
A memorial service for the 3 French expeditioners killed in a helicopter accident in Antarctica last year was held at the French Monument, Cornelian Bay Cemetery, on January 24, 2000.



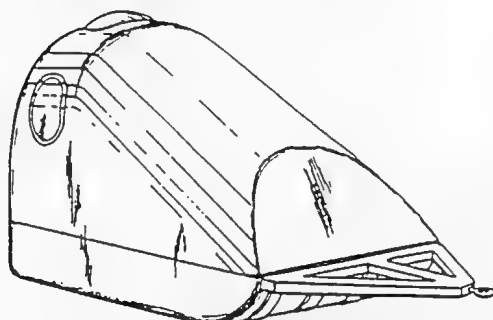
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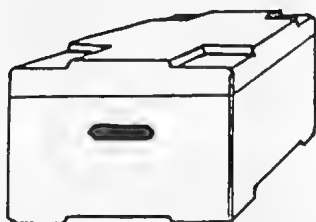
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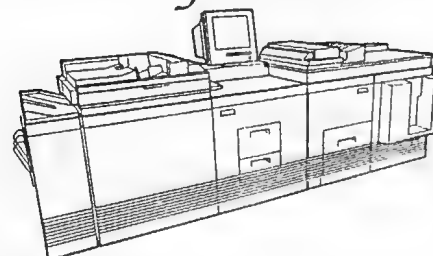
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# POLAR NEWS

## TPN ON THE WEB

The Tasmanian Polar Network website had now been revised and can be found on [www.tpn.aq](http://www.tpn.aq). Thanks to Antoine Guichard of Latitude Technologies, all TPN members are listed, with links to their home pages where possible.

Other Hobart-based Antarctic information is also available, including details of ICE BREAKER magazine, with Polar and Shipping Calendars as well as subscription information.

## WATER CLEANUP SUPPORT

TPN member Stormy Seas Pty Ltd is one of several businesses in Hobart supporting the initiative of David Turner, who wants to keep Hobart's waterfront areas clean all year round, not just during the Christmas/New Year period.

## SOUTHERN SQUID

Four squid researchers from Queensland's James Cook University will complete an 18 month project on their subject in Hobart. The project, to study the squid's lifecycle to ensure a sustainable commercial fishery, will be led by the Tasmanian Aquaculture and Fisheries Institute (TAFI). Some research has already been undertaken at IASOS by one of the marine biologists involved.

## RECORD DRILL DEPTH

A record depth of 939 metres below the sea floor has been reached at Cape Roberts, 125 km north-west of Scott Base in Antarctica. The 6 nation drill team has been able to reach 300 million year sandstone at 823 m below, with data now available on climate cycles between 16-34 million years ago, as well as large ice sheet movements.

Scientists from New Zealand, Australia, Germany, Italy, UK and USA have now been involved in the drilling project for several years.

## SIR VIVIAN FUCHS DIES

Noted polar explorer, Sir Vivian Fuchs, died on November 11, 1999, aged 91. Sir Vivian and his team crossed the Antarctic continent in 1956-58, and he became the first Director of British Antarctic Survey, serving from 1958 to 1973.

## SEAL SONGS

Researchers from the Australian Marine Mammal Research Centre, a collaboration between Taronga Zoo and the University of Sydney, have fitted 10 leopard seals near Davis Station with satellite trackers, so that the seals' eating, foraging and mating habits, as well as the amount of time spent at sea, is recorded. An analysis of their singing, in comparison to the sounds made by other marine mammals, is also being made.

## TPN MEMBER'S AWARDS

Congratulations to Sinclair Knight Merz, consulting engineers, on the 5 awards received in the National Engineering Excellence Awards 1999. These included the highest engineering award in Australia, the Sir William Hudson Award, which was presented to SKM and Multiplex Constructions, for the Olympic Stadium.

## ANTARCTIC GATEWAY DOCUMENTARY

Two September 2000 shows of ABCTV's QUANTUM program will be featuring Hobart's historic and scientific links with Antarctica. Research and filming began at the recent ISCORD 2000 exhibition, where several Tasmanian Polar Network members had displays. Further filming during February included footage at W. Chung Sing's business in Hobart and Malcolm Wallhead and Associates' workshops in Kettering.

The first program explores Hobart's long history of involvement in Antarctic exploration, while the second describes some of the products and services specifically designed for Antarctic conditions, as well as explaining some of the more recent scientific links and ongoing research work at the Australian Antarctic Division.

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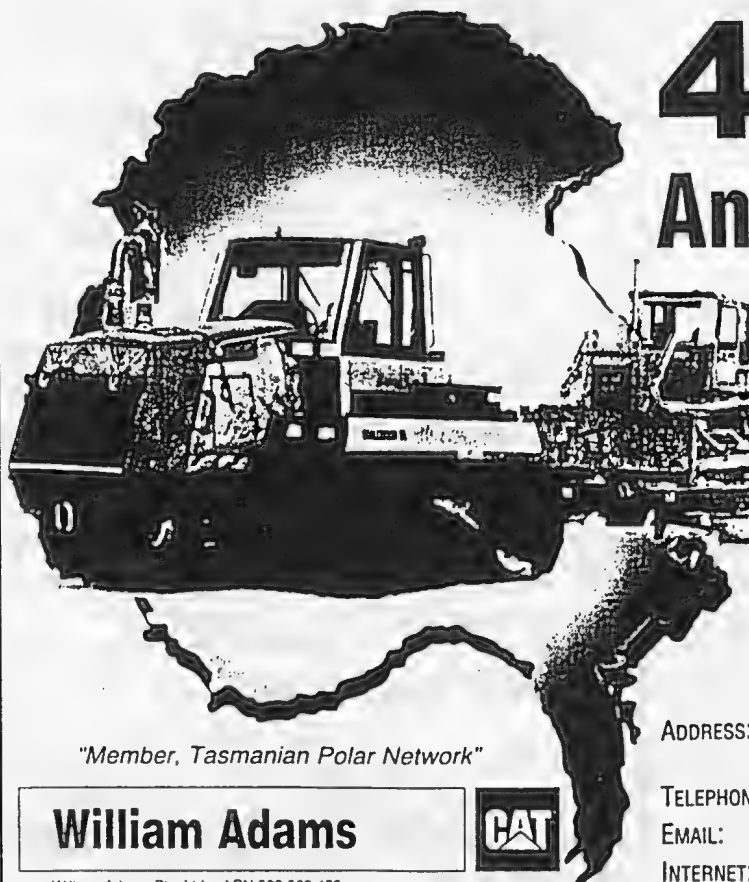
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# POLAR NEWS

## ANTARCTIC RECORD BREAKERS

1. Although their recent trans-Antarctic trek was curtailed, Peter Treseder (Aust) and Tim Jarvis (UK) broke several records by walking 1600 kms unassisted to the South Pole. Crossing from Berkener Island to the Pole in 46 days, Treseder is also the only person to make that crossing twice, while Jarvis is the first Englishman to follow that route.

2. On 24 January 2000, Pom Oliver became the first Australian woman to walk to both the North and South Poles, when she and four British women trekked 1120 kms from Hercules Inlet to the South Pole. Three years earlier, Ms Oliver was a member of the first all-female expedition to the North Pole.

3. The first British couple to the South Pole were Mike and Fiona Thornewill, who reached their goal on January 5, 2000. Accompanying the couple was Catherine Hartley who, with Fiona, became the first British women to reach the Pole.

## CHANGES AT ANTARCTIC ADVENTURE

Since the resignation of Jennifer Trethewey as General Manager, and the publicity given to Macquarie Leisure Trust's dissatisfaction with attendance numbers at the centre, several options are being considered re managerial control of Antarctic Adventure (AA). One of the local options is for the State Government to assume ownership by waiving the \$1.5 million still owing on the State's \$3 million investment. The centre could then be managed by the Tasmanian Museum and Art Gallery (TMAG), who would take over the current operating lease and run AA as a non-profit organisation in tandem with TMAG operations.

Macquarie Leisure Trust wants to dispose of Antarctic Adventure by the end of the current financial year and it is hoped that the new owner's name will be announced in March.

## CREW COMMENDATION

The Australian Transport Safety Bureau has commended the crew of AURORA AUSTRALIS for their handling of an engine room fire in January last year. The investigation found that P&O Polar has taken all reasonable measures to reduce the risk of fire following an incident the previous year. The crew's use of halon fire-fighting equipment had extinguished the fire adequately, but the ship was powerless for 7 hours while attempts were made to cool down the seat of the fire.

## SUPPLIED BY TASMANIANS

Seven Caterpillar Challenger tractors supplied by TPN member William Adams Pty Ltd will be used to tow cargo sleds and tracked trailers full of supplies to the French-Italian Concordia Base in Antarctica. The convoy will be led by 2 Kass-bohrer PB330 snow-grading tractors to clear the way for the other tractors carrying the heavy cargo which was shipped from Hobart to Dumont D'Urville, then transported 1100 kms inland to Concordia. The new base is already operating over summer and the 3 winter buildings are expected to be completed by 2003.

## ANTARCTIC DIVISION VISITORS

Drs Manuel Zapata and Francisco Rodriguez, from Xunta de Galicia and University of Vigo, Spain, are currently visiting the AAD to collaborate with Dr Simon Wright on analysis of chlorophylls and carotenoid marker pigments from marine phytoplankton. These pigments are used to determine the composition and stocks of phytoplankton in the ocean.

Dr Graham Budd, ex ANARE, intends to visit the AAD library in late March or April to research Heard Island history.

## ANTHEA'S WORD

Don't Forget! Subscriptions are due in June 2000 for most readers. If you know anyone who's interested in Hobart's Antarctic activities, why not suggest they subscribe too?





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# POLAR CALENDAR

3	March	2000	TPN Meeting. 11 am. Antarctic Adventure. <b>Hobart, Tas.</b>
28	March	2000	Official opening of the Maritime Museum by Her Majesty, Queen Elizabeth II. Carnegie Building, Argyle St, <b>Hobart, Tas. NEW DATE.</b>
31	March	2000	New date for the last day of Mawson's Antarctica exhibition at Antarctic Adventure. <b>Hobart, Tas.</b>
10-12	April	2000	13th Australian & NZ Climate Forum, hosted by CSIRO Marine Research, Bureau of Meteorology and Antarctic CRC. <b>Hobart, Tas.</b>
17-20	April	2000	GEOSCIENCE 2000. Manchester UK. Contact E-mail: winterm@geolsoc.org.uk
4-5	May	2000	Governor's Forum on Antarctica and the Southern Ocean. (Tentative date) <b>Hobart, Tas.</b>
8-12	May	2000	2nd International Conference on Biology and Conservation of Albatrosses and Other Petrels. Hawaii. Contact E-mail: Beth_Flint@fws.gov
28 2	May June	2000- 2000	TEMP 2000: Insect and Plant Cold Hardiness. University of Victoria, Canada. Contact E-mail: pcmcguire@uvic.ca
2	June	2000	Tasmanian Polar Network Meeting. 11.00 am. Antarctic Adventure. <b>Hobart, Tas.</b>
19-23	June	2000	International Glaciological Society Symposium on Sea Ice and its Interactions with the Ocean, Atmosphere and Biosphere. Fairbanks, Alaska, USA. Contact Simon Ommanney, E-mail: 100751.1667@compuserve.com
25-28	June	2000	International Association of Antarctic Tour Operators (IAATO) Meeting. <b>Hobart, Tas.</b>
2-5	July	2000	Second International Conference on Contaminants in Frozen Ground. Cambridge, U.K. Contact <a href="http://www.freezingground.org/">www.freezingground.org/</a>
3-6	July	2000	52nd Annual Meeting of the International Whaling Commission. Adelaide Convention Centre, Adelaide, South Australia.
10-22	July	2000	XXVI SCAR& XII COMNAP Meetings. Tokyo, Japan. Exhibition 10-13 July. Further info on <a href="http://www.nipr.ac.jp/SCAR-COMNAP-2000-Tokyo">http://www.nipr.ac.jp/SCAR-COMNAP-2000-Tokyo</a>
??	September	2000	ABCTV's QUANTUM programs on Hobart's Antarctic Connections.

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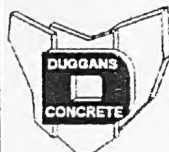
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# THE BACK PAGE

## ANTARCTIC AND SOUTHERN OCEAN SHIPPING CALENDAR

1-5	March	2000	AURORA AUSTRALIS V6	Mawson Station.
3	March	2000	DELPHIN	Arrives Hobart from NZ, departs for Sydney
8	March	2000	AURORA AUSTRALIS V6	Sansom Island.
8	March	2000	SILVER CLOUD	Arrives Hobart from NZ, departs for D'port
9	March	2000	AURORA AUSTRALIS V6	Davis Station.
11	March	2000	L'ASTROLABE	Arrives Hobart from Antarctica.
11	March	2000	JOIDES RESOLUTION	Arrives Hobart from Antarctica.
12	March	2000	SKY PRINCESS	Arrives Hobart from NZ, departs for Melb.
13	March	2000	TANGAROA V5.1	Ends marine geoscience.
13	March	2000	AURORA AUSTRALIS V6	Bunger Hills.
16-17	March	2000	AURORA AUSTRALIS V6	Casey Station.
17	March	2000	AURORA AUSTRALIS V6	Marine Science.
20	March	2000	TANGAROA V5.1	Arrives Wellington, NZ.
23-25	March	2000	AURORA AUSTRALIS V6	Macquarie Island.
28	March	2000	AURORA AUSTRALIS V6	Arrives Hobart. (End of Antarctic Austral Summer Shipping Season.)

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1	October	2000	AURORA AUSTRALIS V1	Departs Hobart for Port Arthur, Tas.
4-7	October	2000	AURORA AUSTRALIS V1	Marine Science.
7	October	2000	POLAR BIRD V2	Departs Fremantle, W.A.
16-20	October	2000	POLAR BIRD V2	Heard Island.
19-24	October	2000	AURORA AUSTRALIS V1	Davis Station.